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Request for Continued Examination (RCE) Transmittal

Address to:
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P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	09/942,830
Filing Date	August 30, 2001
First Named Inventor	Johannes W. M. SONNEMANS
Art Unit	1764
Examiner Name	Tam M. Nguyen
Attorney Docket Number	ACH2823RCE/US

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This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☑ Affidavit(s)/ Declaration(s)

      iii. ☑ Information Disclosure Statement (IDS)

      iv. ☑ Other PTO 1449 & 1 reference

2. **Miscellaneous**

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☑ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 01-1350

      i. ☑ RCE fee required under 37 CFR 1.17(e) 12/02/2003 AWONDAF1 00000011 011350 09942830

      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17) 01 FC:1801 770.00 DA

      iii. ☐ Other _____

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Louis Morris	Registration No. (Attorney/Agent)	28,100
Signature		Date	November 24, 2003

CERTIFICATE OF MAILING OR TRANSMISSION

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Name (Print/Type)	Diane L. Moxley		
Signature		Date	November 24, 2003

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	:	
Johannes Wilhelmus Maria Sonnemans, et al.	:	Docket: ACH 2823US
	:	Examiner: Tam M Nguyen
Serial No.: 942,830	:	Group Art Unit: 1764
Filing Date: August 30, 2001	:	
For: PROCESS FOR EFFECTING ULTRA DEEP HDS OF HYDROCARBON FEEDSTOCKS	:	

Mail Stop: RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22314-1450

RESPONSE UNDER 37 CFR § 1.111

Sir,

This is in response to an Office Action mailed on August 25, 2003, rejecting instant claims 1, 3, 7-12, 14 and 18-28, which are all the claims pending in the present application.

Remarks

The Declaration of Dr. Plantenga submitted herewith provides a detailed discussion of the history of ultra-deep HDS, the chemistry of ultra-deep HDS as compared to conventional HDS and the surprising discovery that led to the present invention.

CERTIFICATE OF MAILING

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November 24, 2003

Diane L. Moxley

Rejections Under 35 USC § 103 (a)

The Examiner rejected the instant claims on the basis of being obvious over Gerritsen et al. (EP-0870817 A1) in view of Takahashi ei al. (US 4,845,068), Takahashi (EP-0357295 A2), or Takahashi (EP-289211 A1). The Examiner acknowledges that Gerritsen does not disclose that the catalyst comprises sulfur-containing organic additive, but alleges that one of ordinary skill in the art at the time the invention was made to have modified the process of Gerritsen by using the catalyst of Takahashi, because the catalyst of Takahashi is effective in a hydrodesulfurization process. What the Examiner ignores are the fundamental differences between the respective hydrodesulfurization processes of Gerritsen and Takahashi that would preclude one skilled in the art from knowing to make the combination.

As explained in the Plantenga Declaration, HDS processes, like those of Takahashi, were effected to reduce the sulfur content of a feedstock from a value of the order of a few percent to a value of about 0.15 wt.% (1500 ppm). Accordingly, the skilled person will recognize that Takahashi relates to catalysts suitable for effecting conventional HDS, because this was the only HDS process known at the time of origin of Takahashi.

As is further explained in the Plantenga Declaration, the conventional HDS described in Takahashi and the ultra-deep HDS that is the subject of the present invention are comparable only in name. They differ in feedstock properties, in product properties, in compounds to be converted and in reaction mechanisms. Conventional HDS involves conversion of sulfides, disulfides, thiophenes and benzothiophenes via direct sulfur extraction, as opposed to ultra-deep HDS that deals mainly with the conversion of alkylated dibenzothiophenes via hydrogenation followed by sulfur extraction .

Another very important consideration, as further described in the Declaration of Dr. Plantenga, was the surprising discovery which revealed that the activity ranking for ultra-deep HDS differed from the activity ranking known for conventional HDS and the catalysts with the best performance in conventional HDS did not show the best performance in ultra-deep HDS. The catalyst of Takahashi is evidently eminently suitable for conventional HDS.

Thus, In view of the very high activity of the Takahashi catalyst in conventional HDS, the skilled person would conclude that the chances of this catalyst performing well in ultra-deep HDS would be very low indeed.

Therefore, at the time the present invention was made, one of ordinary skill in the art would not only have no reason to believe that catalysts effective for conventional HDS as in Takahashi would be effective for ultra-deep HDS, because of the completely different sulfur chemistry involved in the respective processes, that person would be actually dissuaded from using the catalyst of Yamaguchi in ultra-deep HDS in view of the knowledge that a good HDS catalyst will generally not be a good catalyst for ultra-deep HDS.

Absent from Gerritsen is any hint to employ an organic additive as required by the instant claims. Takahashi discloses use of an organic additive to contribute to catalyst activity, but catalyst activity is related to the chemistry of the sulfur compounds to be converted. For some reason the additive of Takahashi results in a catalyst that is highly active in the above described sulfur-compound conversion process that takes place in conventional HDS, as opposed to the above described sulfur-compound conversion process that takes place in ultra-deep HDS.

There is nothing in Takahashi which would lead a skilled person to the expectation or even the suggestion that something which, for unclear reasons, increases the activity of a catalyst in the conversion of sulfides, disulfides,

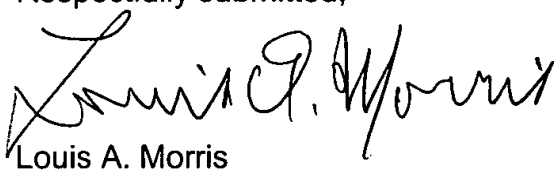
thiophenes and benzothiophenes via direct sulfur extraction would also be good in the conversion of alkylated dibenzothiophenes via hydrogenation followed by sulfur extraction. There would thus be no expectation of success in combining Takahashi with Gerritsen.

Conclusion

To combine Takahashi and Gerritsen to arrive at the present invention, one of ordinary skill in the art would also somehow have to know to use the organic additive of Takahashi in the process of Gerritsen in spite of the chemistry of the two processes being completely different. Combining the references in that manner would in fact be an exercise in hindsight, clearly not permitted under the law. The claimed subject matter is thus non-obvious over Gerritsen in view of Takahashi.

It is respectfully requested that the instant claims be allowed and that the present application proceed to issue in due course.

Respectfully submitted,



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